



US 20100103137A1

(19) **United States**(12) **Patent Application Publication**  
**Ciesla et al.**(10) **Pub. No.: US 2010/0103137 A1**(43) **Pub. Date: Apr. 29, 2010**(54) **USER INTERFACE SYSTEM AND METHOD****Publication Classification**(76) Inventors: **Craig Michael Ciesla**, Mountain View, CA (US); **Micah B. Yairi**, Palo Alto, CA (US)(51) **Int. Cl.**  
**G06F 3/045** (2006.01)  
**G08C 21/00** (2006.01)  
(52) **U.S. Cl.** ..... **345/174; 178/18.01**

Correspondence Address:

**SCHOX PLC****500 3rd Street, Suite 515****San Francisco, CA 94107 (US)**(57) **ABSTRACT**

The user interface system of the preferred embodiments includes a sheet that defines a surface on one side and at least partially defines a cavity on an opposite side; a volume of a fluid contained within the cavity; a displacement device that modifies the volume of the fluid to expand the cavity, thereby outwardly deforming a particular region of the surface; and a sensor that detects a force applied by a user that inwardly deforms the particular region of the surface. The user interface system has been specifically designed to be used as the user interface for an electronic device, more preferably in an electronic device that benefits from an adaptive user interface, but may alternatively be used in any suitable application.

(21) Appl. No.: **12/497,622**(22) Filed: **Jul. 3, 2009****Related U.S. Application Data**

(63) Continuation-in-part of application No. 11/969,848, filed on Jan. 4, 2008, Continuation-in-part of application No. 12/319,334, filed on Jan. 5, 2009.

